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ABSTRACT

Self-directed learning (SDL) is among the most productive areas of research in adult education. Malcolm S. Knowles is credited with a comprehensive synthesis of adult teaching and adult learning principles. Andragogy, the art and science of helping adults learn, lies at the heart of Knowles' work. Lucy M. Guglielmino theorized regarding the occurrence of self-direction in learning. Stephen D. Brookfield considered SDL from both cognitive and behavioral perspectives. Ralph G. Brockett and Roger Hiemstra embraced the view that the concept of SDL should be seen as only one part of a broader concept, and their conceptualization of SDL was a synthesis of other writers' multidimensional conceptualizations. According to Philip C. Candy, SDL involves the following tenets: (1) the interaction between a person and his or her environment; (2) knowledge as tentative, evanescent, and socially constructed; (3) learning as a qualitative shift in how phenomena are viewed; and (4) individuals as engaging in complex, mutually interdependent relationships with their environments. The research of these individuals has led to many theoretical approaches to SDL, including the following: humanism; personal responsibility orientation; behaviorism; neobehaviorism; critical perspectives; and constructivism. Numerous researchers have used qualitative and quantitative research methods to expand understanding of SDL. (Contains 147 references.) (MN)

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SELF-DIRECTED LEARNING IN ADULTHOOD: A LITERATURE REVIEW

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The meaning of self-direction in adult learning has been "skewed by those who choose to define it as they wish" (Brookfield, 1986, p. 18). The distortion surrounding self-direction in adult learning can be attributed to haphazard nomenclature. Self-direction in adult learning has been referred to as self-teaching, self-planned learning, independent adult learning, self-directed learning, and self-initiated learning.

This paper reviews the literature related to self-direction. Self-direction is reviewed in terms of definitions, theoretical perspectives, and research approaches.

Defining Self-Directed Learning

Despite how it is coined, self-direction in adult learning is more than just a misunderstood concept. It is "a way of life" (Brockett & Hiemstra, 1991, p. 18). The definitions of

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self-direction include those espoused by Malcolm S. Knowles, Lucy M. Guglielmino, Stephen D. Brookfield, Ralph G. Brockett and Roger Hiemstra, and Philip C. Candy.

Malcolm S. Knowles

Knowles (1968, 1970, 1980) is credited with a comprehensive syntheses of adult teaching and adult learning principles. At the heart of Knowles' work is andragogy, the art and science of helping adults learn. A facilitator who adopts andragogical principles empowers learners to accept dual responsibility for teaching and learning. Knowles contrasts andragogy with pedagogy, the art and science of teaching children. Pedagogy reflects the traditional practice of teaching and learning. An instructor who follows pedagogical principles accepts responsibility for the entire teaching/learning transaction.

Knowles (1975) defined the self-directed learning process as one in which "individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (1975, p. 18). The art of andragogy includes self-direction as one of its key components (Knowles, 1989; 1990). According to Knowles, "adults are self-directing when they undertake to learn something on their own" (1989, p. 91).

Self-direction has contributed to the understanding of two andragogical principles (Pratt, 1993). First, self-direction is a fundamental characteristic of the adulthood experience in democratic societies. That is, "there is a tension between freedom and authority, especially regarding the management and evaluation of learning. Andragogy leans heavily toward learner freedom (versus teacher authority) . . . , promoting self-direction, and personal autonomy" (Pratt, 1993, p. 22). And second, self-directing adults have the potential to live autonomous and fulfilled lives despite social, political, cultural, and historical constraints. Andragogy assumes that individuals are most ready for self-directed learning when faced with constraining variables. Regarding readiness to learn, "[a]dults become ready to learn those things they need to know or to be able to do in order to cope effectively with their real-life situations" (Knowles, 1989, p. 84).

Lucy M. Guglielmino

Guglielmino (1977) theorized regarding the occurrence of self-direction in learning. According to Guglielmino, "self-direction in learning can occur in a wide variety of situations, ranging from a teacher-directed classroom to self-planned and self-conducted learning projects" (1977, p. 34). Guglielmino thought that certain learning situations tend to promote self-directed learning better than others. But she charged that the

personal characteristics of the learner (i.e., attitudes, values, beliefs, and abilities) "ultimately determine whether self-directed learning will take place in a given learning situation. The self-directed learner more often chooses or influences the learning objectives, activities, resources, priorities and levels of energy expenditure than does the other-directed learner" (Guglielmino, 1977, p. 34).

More recently, Guglielmino & Guglielmino (1991) warned learners that self-direction is rarely neat, orderly, continuous, or sequential in nature. In any self-directed learning project, according to Guglielmino & Guglielmino, "problems may arise, such as lack of resources or lack of time" (1991, p. 10). Interruptions in learning occur as other areas of life intervene. A random incident may restart the learning process by providing renewed motivation or interest. Another random force may cause re-evaluation or redirection. Finally, "learning projects may not always be consciously planned and therefore not consciously carried through. More focused planning and reflection on the process, however, are likely to enhance significantly the value and effectiveness of any self-directed learning project" (Guglielmino & Guglielmino, 1991, p. 10).

Stephen D. Brookfield

A change in behavior was once the most common definition of learning, and learning theory was once dominated by empiricism. According to Pratt, "if the learner was active in constructing meaning and interpreting experience, knowledge and truth were compromised" (1993, p. 16). Learning that was not observable was thus deemed insignificant. Brookfield (1986) considered the notion of self-directed learning from both cognitive and behavioral perspectives. To Brookfield, self-directed learning is a cognitive process grounded in reflection and action "whereby we learn how to change our perspectives, shift our paradigms, and replace one way of interpreting the world by another" (1986, p. 19).

Brookfield (1986) reported that the characteristics conducive to successful self-directed learning are associated with field dependence. Field dependent learners, according to Witkin (1949, 1950) are aware of context, extrinsically oriented, responsive to external reinforcement, are cognizant of the effects that their learning has on others, and view things holistically. Field independent learners, in contrast, are inner-directed, individualistic, analytical, socially independent, and possess a strong sense of self-identity. Successful self-directed learners value social networks, skill modeling, oral consultation, peer evaluation, and learning

accidentally-- the capacities said to be possessed by field dependent learners. Yet field independence is typically regarded as the preferred adult learning style. According to Brookfield, "we have to rethink very critically the notion that the single-mindedness, planning capability, and goal orientation characteristic of field independent learning are somehow superior to the field dependent's awareness of contextuality" (1986, p. 42). It was evident to Brookfield (1986) that studies were lacking

> of the range of learning styles observable with different learners in different settings. Until such studies accumulate to the point where we can say with some certainty what the typical styles of learning in certain situations are, we should be wary. (pp. 45-46)

Brookfield recognized that the social and political aspects of self-direction were largely being ignored and offered his version of a critical practice of adult education (Brookfield, 1993). His critical practice of adult education posited that the self is culturally formed, thus demonstrating the political aspects of self-direction. If the cultural formation of the self is ignored, "it is all too easy to equate self-direction with separateness and even selfishness" (Brookfield, 1993, p. 239). Brookfield's case for self-direction as a political concept rests on two arguments. First is the issue of control

over what learning activities and processes are considered politically correct. Second, exercising self-direction requires that certain political conditions be in place regarding access to resources.

When considering definitions of self-directed learning, "it is not only necessary to understand *who* has offered a particular definition, but *when* it was offered" (Brockett & Hiemstra, 1991, p. 21). For instance, Brookfield (1981a) used the term independent adult learning to describe the process by which learners generate goals, identify resources, rate their progress, and evaluate themselves. In using the term self-directed learning, Brookfield (1984) highlighted the differences between learning (an internal change in consciousness) and education (the act of learning). In 1986 Brookfield used the term self-directed learning in describing a cognitive process grounded in reflection and action. Brookfield has since distinguished learning from "the educational setting or mode in which such learning occurs" (1988, p. 16). Most recently, Brookfield (1993) has reverted back to the use of self-directed learning as a critical theory of adult education.

Ralph G. Brockett & Roger Hiemstra

Brockett and Hiemstra (1991) embraced the view that the concept of self-direction in adult learning should not be limited to the term self-directed learning. To expand the

concept, they recommended that the term self-directed learning be seen as only one part of a broader concept. The broader concept of self-direction in learning "can provide the breadth needed to reflect more fully the current understanding of the concept" (Brockett & Hiemstra, 1991, p. 24).

Given that self-direction in learning can be thought of as both an instructional strategy and a personality characteristic, Brockett and Hiemstra grant both notions their own terminology. Self-directed learning refers to the "process in which a learner assumes primary responsibility for planning, implementing, and evaluating the learning process" (Brockett & Hiemstra, 1991, p. 24). Learner self-direction "centers on a learner's desire or preference for assuming responsibility for learning" (Brockett & Hiemstra, 1991, p. 24). Thus, self-direction in learning refers to "both the external characteristics of an instructional process and the internal characteristics of the learner, where the individual assumes primary responsibility for a learning experience" (Brockett & Hiemstra, 1991, p. 24). Brockett and Hiemstra's conceptualization of self-direction in adult learning is a synthesis of other writer's multidimensional conceptualizations, e.g., Kasworm (1983), Long & Agyekum (1983, 1988), and Oddi (1987).

Phillip C. Candy

Candy's (1991) definition of self-direction is made up of the following basic tenets: (a) the interaction between a person and his or her environment, (b) knowledge as tentative, evanescent, and socially constructed, (c) learning as a qualitative shift in how phenomena are viewed, and (d) individuals as engaging in complex, mutually interdependent relationships with their environments. Moreover, Candy distinguished self-direction as an outcome of education from self-direction as a method of education.

As an outcome, self-direction is broken down into personal autonomy and self-management. Personal autonomy refers to a learner's personal characteristics. Self-management is "the willingness and capacity to conduct one's own education" (Candy, 1991, p. 23). As a method, Candy breaks self-direction down into learner control and autodidaxy. Learner control is one extreme of the instructional domain; teacher control is the other extreme. Self-direction as controlled by the learner occurs in formal instructional settings. Autodidaxy is one extreme of Candy's autodidactic domain; assisted autodidaxy is the other. Autodidaxy occurs in informal, everyday contexts. The entire educational continuum ranges from teacher-control to learner-control, from learner-control to assisted autodidaxy, and from assisted autodidaxy to autodidaxy.

Candy admits that the idea of an educational continuum is misleading. To better illustrate the idea of an educational continuum, Candy uses an area of overlap to reflect an intersection between the instructional domain and the autodidactic domain. From an observer's point of view, "it is impossible to discern whether the primary orientation [of the overlap area] is one of 'instruction' or of 'self-instruction' (autodidaxy)" (Candy, 1991, p. 17).

Self-direction is defined differently by different people. Among the differences are similarities, however. The definitions espoused by Knowles, Guglielmino, Brookfield, Brockett and Hiemstra, and Candy are similar in that they all identify self-directed learning as a characteristic of adulthood. The following four aspects of adult learning are inherent in the aforementioned definitions: (a) learning for adaptation to and the transmission of culture, (b) learning for the understanding and development of expertise or specialist knowledge, (c) learning for the vitalization of organizations and societies, and (d) learning for personal fulfillment.

Theorizing Self-Directed Learning

There are many theoretical approaches to self-directed learning. Theoretical approaches to self-directed learning include humanism, personal responsibility orientation (PRO),

behaviorism, neobehaviorism, critical perspectives, and constructivism.

Humanism

The predominating theoretical orientation underlying self-directed learning is humanism (Caffarella, 1993). Humanists believe that learners are impelled toward self-actualization. Self-actualization, according to Brockett and Hiemstra (1991),

> refers to the highest level of human growth, where one has reached one's full potential. As with self-direction, though, it is important to think of self-actualization as an extreme on a continuum, an ideal state toward which one is continuously striving. (p. 125)

In a humanistic environment, the primary function of an educator is to facilitate with the intent of expediting individual learning needs. From a humanistic perspective, learner development and responsibility are of utmost importance. To a humanistic facilitator, the expert delivery of course content is of secondary importance. According to Ellis (1982),

> a humanistic outlook on life virtually requires self-direction at almost every level . . . . This kind of outlook includes an emphasis on viewing people holistically . . . , with the aim of helping them, individually and collectively, to live a happier, more self-actualizing, and more creative existence. Humanism fully accepts people

with their human limitations. It particularly focuses upon and studies their basic experiences and their values. It emphasizes their ability to create and direct their own destinies. It sees them as goal-directed individuals who are important in their own right just because they are alive, and who have the right to continue to live and enjoy and fulfill themselves--in their private lives as well as in their communal and cooperative relations with others. (p. 28)

The Personal Responsibility Orientation (PRO) model illustrates the link between humanism and self-direction in adult learning (Brockett & Hiemstra, 1991). For instance, the PRO model purports "to recognize both the differences and similarities between self-directed learning as an instructional method and learner self-direction as a personality characteristic" (Brockett & Hiemstra, 1991, p. 26). According to the PRO model, the point of departure for understanding self-direction in learning is the internal notion of personal responsibility. Personal responsibility is not an either/or notion. Instead, individuals possess different degrees of willingness to accept responsibility for their thoughts and actions.

Departing from personal responsibility are two learning orientations: process and personal. Central to the process

orientation to learning is the idea of self-directed learning as an instructional method. The process orientation of self-direction in learning focuses on external characteristics of the teaching-learning process (i.e., planning, implementing, evaluating). Central to the personal orientation to learning is the idea of learner self-direction as a personality characteristic. The personal orientation of self-direction in learning focuses on internal characteristics of individuals (i.e., creativity, self-concept, life satisfaction). Both learning orientations can be viewed on a continuum. Refer to the Definitions section in Chapter One for more detailed descriptions of self-directed learning, learner self-direction, and self-direction in learning.

All combined, the process and personal orientations make up the concept of self-direction in adult learning. That is, via the notion of personal responsibility, the concept of self-direction in adult learning illustrates the strong connection between self-directed learning and learner self-direction. Self-direction in adult learning recognizes both the external and internal forces that when combined, provide "a key to understanding the success of self-direction in a given learning context" (Brockett & Hiemstra, 1991, p. 30). Optimal conditions for learning exist when there is a balance, or congruence between self-directed learning and learner self-direction.

Learning difficulties and frustrations arise "when the balance between internal characteristics of the learner are not in harmony with external characteristics of the teaching-learning transaction" (Brockett & Hiemstra, 1991, p. 30).

In order to truly understand self-direction in adult learning, it is crucial to recognize and deal with the connections between individuals and society. All elements of the PRO model are encompassed by a circle. Such a circle represents the social arena in which the activities of self-direction are executed. While the individual is the starting point, consideration of the social context in which learning occurs is vital to understanding the phenomenon of self-direction. From a humanistic perspective, the PRO model recognizes the social context in which self-directed learning has the potential to occur.

Behaviorism & Neobehaviorism

Behaviorism is based upon the premise that learning occurs via the reinforcement of desired responses. That is, human nature is shaped by environmental influences. Three practices rooted in behaviorism are particularly valuable to the understanding of self-direction: learning contracts, skill-based instructional techniques, and self-modification (Brockett & Hiemstra, 1991).

Penland (1981) suggested that self-directed learning can be understood from a neobehaviorist perspective. Neobehavioral learning techniques have as their goal the internalization of reinforcement so that new learning is rewarded in and of itself (Kramlinger & Huberty, 1990). That is, an element of cognition mediates between a stimulus and its associated response. Thus, "where classical behaviorism is only concerned with the environment as a determinant of behavior, neobehaviorism stresses the interaction of the individual and environment" (Brockett & Hiemstra, 1991, p. 128).

Piskurich's (1993) definition of self-directed learning is a more recent example of how neobehavioral learning works. Piskurich defined self-directed learning as "a training design in which trainees masters packages of predetermined material, at their own pace, without the aid of an instructor" (p. 330). Furthermore according to Piskurich, "in most training situations--particularly technical and skills training--SDL requires a more structured, less trainee choice-centered approach if it is to meet the needs of the organization" (p. 6). Thus trainees are expected to learn what is needed by their employing institution before they can choose to learn about topics of personal interest. Self-directed learning as a technical training design used by organizations in the development of human resources contrasts with the choice-

centered definitions espoused by Knowles, Guglielmino, Brookfield, Brockett and Hiemstra, and Candy.

Critical Perspectives

Critical perspectives of self-directed learning include those espoused by Paulo Freire, Jack Mezirow, and Stephen D. Brookfield. Freire's (1970) critical perspective is called conscientization. 'Conscientization is the defining characteristic of adulthood, and "is the process in which men, not as recipients, but as knowing subjects, achieve a deepening awareness both of the sociocultural reality which shapes their lives and of their capacity to transform that reality" (Freire, 1970, p. 27). There are varying levels of conscientization, ranging from the lowest level of consciousness to the highest level of critical conscientization. The ultimate goal of conscientization is praxis. Praxis is a continuous process of investigation and exploration, followed by action grounded in exploration, followed by reflection on action, followed by further investigation and exploration, followed by further action, reflection, and so on.

Rogers (1977) once compared his self-directed approach to learning with Freire's (1970) ideals and found them to be remarkably similar. Roger's opinion has since been debated. One synthesis of the debate has been offered by O'Hara (1989).

O'Hara suggested that any difference between Freire and Rogers could be understood by recognizing that

> [b]oth unabashedly celebrate human existence and our evolutionary potential. They write of their fascination with human capacity for self-regulation, self-understanding, and transcendence. Neither begs the intervention of a God, magic, manipulative technology, or supernatural forces. They are both radical humanists. (p. 13)

Freire specializes in empowering oppressed individuals and groups. His technique of liberation is more partner-like than facilitative or educative in nature. He seeks to establish a dialogue regarding issues of concern to the disadvantaged, and based on trust, support, and openness, encourages a better understanding of religious, social, political, and economic issues. A better understanding of the issues motivates many individuals to act collectively for the sake of society (Freire, 1970).

Mezirow's critical view of self-directed learning is referred to as perspective transformation. According to Mezirow (1991),

> [p]erspective transformation is the process of becoming critically aware of how and why our presuppositions have come to constrain the way we perceive, understand, and feel

about our world; of reformulating these assumptions to permit a more inclusive, discriminating, permeable, and integrative perspective; and of making decisions or otherwise acting upon these new understandings. p. 14)

Perspective transformations are triggered by disorienting dilemmas (Mezirow, 1991). Disorienting dilemmas originate as individually meaningful realizations and are prone to triggering either individual or collective action. Perspective transformations caused by disorienting dilemmas move individuals toward new, more accurate assumptions, perceptions, and world views. According to Mezirow, "[b]ecoming critically aware of what has been taken for granted about one's own learning is the key to self-directedness" (1985, p. 17). To Mezirow, self-direction is both the basis for a theory of adult education and the mode of learning characteristic of adulthood.

Brookfield's (1991) perspective of self-direction centers on the occurrence and scrutiny of critical incidents. Critical incidents are self-written accounts of significant life events. Contextually specific aspects of people's experiences are highlighted on paper. The scrutiny of critical incidents entails identifying assumptions, analyzing their accuracy, and then reconstructing them. Assumptions are the "taken-for-granted ideas, commonsense beliefs, and self-evident rules of thumb that inform our thoughts and actions" (Brookfield, 1991,

p. 177). They are "the interpretive glue that binds the various meaning schemes comprising our structures of understanding" (Brookfield, 1991, p. 177). We think and act based on meaning schemes derived from experiences. Personal and political meanings are oftentimes only partially accurate. Inaccurate views require restructuring for the sake of self and society. The accuracy of one's world view determines the accuracy of one's actions. The purpose of scrutinizing critical incidents is to provide a catalyst for the reconstruction of inaccurate assumptions. Misassumptions tend to obscure reality.

Becoming aware of and adjusting the assumptions underlying thought and action is enormously difficult and raises ethical questions. According to Brookfield (1991),

> [e]ngaging in critical thinking is not a continuously joyful experience in creative self-actualization. It is psychologically and politically dangerous, involving risks to one's livelihood, social networks, and psychological stability. In some cultures, people who think critically--who question accepted assumptions--are the first to disappear, to be tortured, or to be murdered in the event of a political coup. (p. 179)

Critical thinking is a meaningful part of self-directed learning because it involves analysis and judgement of a problem or situation. According to Brockett and Hiemstra (1991),

by being critical, one is demonstrating an unwillingness to accept 'what is' as inevitable. By being critical, one is thus able to assume personal responsibility for one's beliefs or actions rather than pass off such responsibility to a source outside oneself. (p. 135)

Constructivism

Constructivism refers to an individual's attempt to impose meaning and significance upon events and ideas (Candy, 1991). According to the constructivist paradigm, learning is an active process of constructing meaning and transforming understandings. Because no two people have identical experiences, each person constructs his or her own understanding of reality. The basic concern of constructivism is with "how people make sense of the perplexing variety and constantly changing texture of their experience" (Candy, 1991, p. 255). To Candy, three domains are of greatest relevance to self-directed learning (i.e., assumptions about human nature, the nature of knowledge, and the meaning of learning).

Constructivists maintain that from birth, people embark on a voyage of inquiry and exploration. They are not bound by conditioning, but are different as a result of choosing to act differently. Furthermore, individuals are in a state of dynamic equilibrium in which they seek to balance their world.

Knowledge cannot be taught but is constructed by the learner. Each person's world view and explanatory system is entirely unique. We constantly search for knowledge that supports or opposes our own world-view.

Constructivism is concerned with how learners construe events and ideas and how they construct structures of meaning. Construing refers to a learner's interpretation of events and ideas. Construction refers to a learner's assemblance of meaning. Accepting constructivism involves embracing a different view of how people make sense of their worlds. Since this is central to understanding learning, "it is also a vital starting point in considering the nature of self-directed learning" (Candy, 1991, p. 257).

The predominating orientation underlying theories of self-directed learning is humanism. The Personal Responsibility Orientation (PRO) model recognizes and deals with the connections between individuals and society. Freire's critical perspective of self-directed learning is called conscientization. The ultimate goal of conscientization is praxis. Mezirow's critical view is referred to as perspective transformation. Perspective transformations are triggered by disorienting dilemmas. Brookfield's (1991) perspective of self-directed learning centers around the occurrence and scrutiny of critical incidents. The purpose of scrutinizing critical

incidents is to provide a catalyst for the reconstruction of inaccurate assumptions. The theory of constructivism refers to an individual's attempt to impose meaning and significance upon events and ideas. Constructivists maintain that from birth, people embark on a voyage of inquiry and exploration. The theories of behaviorism and neobehaviorism are exceptions in that they are compelled by positivism, not humanism.

Researching Self-Directed Learning

Self-direction in adult learning is an extensively researched area in the field of adult education. According to Caffarella and O'Donnell (1988), the following five areas represent the content areas that make up the self-directed learning research base: philosophic perspectives, descriptive investigations of learning projects, program planning and implementation, characteristics of adult learners, and administrative/social policies. Brockett and Hiemstra (1991) offered an alternative classification scheme. According to Brockett and Hiemstra, three methodological approaches account for the research efforts into self-directed learning. That is, the research concerning self-direction in adult learning can be been classified according to learning projects, qualitative studies, and quantitative measures.

Learning Projects Research

Self-directed learning, one of the most productive areas of research in adult education, was partially stimulated by Houle's (1961) The Inquiring Mind. Houle extensively interviewed 22 adults and consequently put their personal and social experiences into educative contexts. In 1988 Houle acknowledged having stimulated new topics for investigation in adult education. Topics for research inspired by Houle's work include adult learning projects. Learning projects are highly deliberate episodes planned by individuals in an attempt to gain certain knowledge and skills (Tough, 1971, 1979). Tough's learning projects investigation described in detail the process by which 66 adults planed their own learning activities. His descriptive survey data were obtained via a highly structured interview process and have been a major contribution to the explanation of the phenomenon of what Tough deemed self-planned learning. Tough found that the average number of learning projects attempted per year was 8.3 and that 68% of participants' learning projects were planned primarily by themselves.

Many replication studies have reaffirmed Tough's original findings. Coolican (1975) found that 48 mothers of adolescents averaged 5.8 learning projects per year and that 66% of these projects were self-planned. Peters and Gordon (1974)

interviewed 475 East Tennesseans and revealed that rural adults averaged 3.1 learning projects per year while urban adults averaged 4.1 learning projects per year. Overall, 66% of participants' projects were planned primarily by themselves.

The first study to focus on the learning projects of older adults was conducted by Hiemstra (1975). Of 256 randomly selected adults at least 55 years of age, Hiemstra found that an average of 325 hours per year was spent on 3.3 projects per individual and that 55% of all projects were self-planned. Penland (1977, 1979) is credited with one of the most comprehensive learning project studies. Survey interviews from a U.S. national sample of adults showed: (a) 78.9% considered themselves to be continuing self-learners, (b) number of projects per person averaged 3.3, and (c) an average of 155.8 hours was spent on each project.

Not all learning projects investigations indicate a high degree of self-planning among participants. Several studies have found that 50% or fewer learning projects are self-planned (Baghi, 1979; Field, 1979; Johnson, 1973; Miller & Botsman, 1975; Umoren, 1978).

There are three strengths and two limitations of the learning projects paradigm (Brockett & Hiemstra, 1991; Brookfield, 1981b). Strengths include: (a) the chance to study adults' informal learning activities, (b) the methodological

structure accompanying inquiry into adults' learning projects, and (c) the generation of data concerning participation in self-directed learning activities. Limitations include the inconsistent use of structured interviews and the inconsistency of data analysis procedures. Limitations aside, Tough's (1971) study and associated replications represent one of the most significant streams of research in all of North American adult education (Brockett & Hiemstra, 1991).

Qualitative Studies

Qualitative studies generally include the accumulation of observations, interviews, and theories. The descriptive data derived from qualitative studies of self-direction permits researchers to better understand the influence of adult education principles upon participants' experiences.

Gibbons, Bailey, Comeau, Schmuck, Seymour, and Wallace (1980) conducted a content analysis of the biographies of 22 individuals who had obtained expertise in their chosen field without formal training. Included were the biographies of Walt Disney, Virginia Woolf, and Malcolm X. It was concluded that the assumptions underlying formal schooling and self-directed learning are different. Brookfield (1981a) used a semi-structured interview process with his sample of 25 adults who were experts in their particular field. Participants exhibited a willingness to share their knowledge and valued the

recognition that coupled success. Participants also exhibited signs of cooperation in the sense that they identified themselves as members of common interest groups, and competitiveness in the sense that peer recognition was valued. Cooperation was associated with objective measures of evaluation, e.g., requesting advise from peers. Competition was associated with subjective measures of evaluation (i.e., interrogating the work of other experts).

Based on interviews with 78 self-directed learners without high school diplomas, Spear and Mocker (1984) found that a conscious effort to preplan learning activities did not exist among self-directed learners. Instead, the structure and direction of learning activities stemed from available resources apparent to the individual. Kasworm (1988a) undertook an investigation into self-directed learning. Interviews with seven graduate students showed evidence of support for and the presence of self-direction in the graduate classroom. In a follow-up interview study with ten randomly selected adult undergraduates, Kasworm (1988b) identified response patterns that led her to conclude that self-direction is a vital part of learning in academia. Smith (1990) sought to understand self-directed learning as experienced by 22 public librarians. Data analyzed by a constant comparative method led Smith to better understand public librarians' facilitation of and institutional

responses to self-directed learning. The Wright brothers used trial and error in the way they "planned, developed, and completed one of the most vivid examples of a self-planned, self-directed adult learning project" (Cavaliere, 1992, p. 51). In a case study of the Wrights' quest for flight, Cavaliere found that as their learning journey unfolded, the following five stages of self-direction became apparent: inquiring, modeling, experimenting and practicing, theorizing and perfecting, and actualizing.

Herd (1995) sought to gain insight into the learning experiences of eleven adult basic education students via interviews and observations. The majority of students were self-directed in that they were aware of their own learning processes and that different problems require different approaches. The majority had a sense of when and where to seek help when undertaking their own learning projects. Gonzalez (1996) sought to gain insight into the perceptions of nontraditional students regarding their experience with and perceptions of adult teaching and learning concepts and practices. Document analysis, interviews, and observations indicated that nontraditional students and teachers were not guided by a comprehensive vision of adult education. Nontraditional students were further identified as a community

of learners wherein members had not been fully recognized or developed.

Sipe (1995) explored the factors that supported and hindered self-directed learning in the lives of fifty experimentally open teachers. Findings from focus groups, interviews, and a psychometric instrument demonstrated that learning and changing are natural and essential. Change and risk taking were found to be invitations, not threats. And self-direction, collaboration, reflection, and challenge were highly valued in the teachers' learning situations. Uhland's (1996) examined the learning strategies of low-literate adults. Results from focus groups, interviews, and a psychometric instrument revealed that low-literate adults actively engage in real-life learning situations, and that active engagement in real-life learning can mitigate the negative effects of past schooling. Furthermore, past schooling did not appear to influence the selection or rejection of self-directed learning strategies.

There are two advantages and one disadvantage to the qualitative research paradigm (Brockett & Hiemstra, 1991). One advantage is its compatibility with undereducated adults, or individuals unlikely to participate in formal learning activities. Another advantage to the qualitative paradigm is the variety of theoretical perspectives it has produced in

relation to self-direction. The qualitative paradigm is particularly useful for studying self-direction from a sociological or anthropological perspective. However, "qualitative approaches are probably not useful in studies focusing on personality dimensions, such as those that fall within the bounds of learner self-direction" (Brockett & Hiemstra, 1991, pp. 95-96).

Quantitative Measures

In quantifying self-direction, most paper and pencil instruments measure the extent to which individuals possess the qualities associated with self-directedness. According to Brockett and Hiemstra, "studies designed to measure an individual's level of self-directedness have moved the body of knowledge in this area well beyond descriptions of the frequency and nature of self-directed learning activities" (1991, p. 81). Yet there is little evidence concerning the self-directed learning process. For instance, numerous research studies have identified the personological characteristics of self-directed learners, but few have examined the process of how one actually becomes a self-directed learner (Cranton, 1992). To remedy such a problem, Pilling (1991) created the Self-Directed Learning Test, subsequently named the Self-Directed Learning Perception Scale (SDLPS). The SDLPS assesses students' perceptions of what they are experiencing and feeling during the self-directed

learning process (Pilling-Cormick, 1994). Pilling-Cormick has since experienced resistance from adult educators to using the SDLPS in their classes. Pilling-Cormick maintains that misconceptions about the term self-directed learning and discrepancies between educators' beliefs and practices are potential reasons for not using the SDLPS.

The substantial use of two additional instruments have helped make self-directed learning one of the most thoroughly researched areas in adult education. These are the Oddi Continuing Learning Inventory, developed in 1984, and the Self-Directed Learning Readiness Scale, developed by Guglielmino in 1977.

The Oddi Continuing Learning Inventory is a 24-item Likert scale that measures self-directed continuing learning, a trait believed to be fundamental to success in continuing professional education. Research supports the reliability of the OCLI. Cronbach coefficient alphas of .77, .85, and .77 were estimated by Six (1987), Oddi (1984, 1986), and Landers (1990), respectively. Furthermore, by correlating pairs of factor scores as recommended by Gorsuch (1983), Six (1989) showed that the OCLI's factor structure is reliable throughout the data sets used by Six (N=328), Oddi (N=271), and Landers (N=98). Further reliability support for the OCLI has been provided by Oddi, Ellis, and Roberson (1990), Six and Hiemstra (1987) and West &

Bentley (1991). Critics of the OCLI include Brockett and Hiemstra (1991), Landers, (1990), Six and Hiemstra (1987) and West & Bentley (1991).

Self-directed continuing learning as measured by the OCLI has been positively correlated with such variables as anxiety (Ryan, 1999), instruction technique (Newton, 1995), problem-based learning (Shulman, 1995), gender (Oddi, 1986; Shulman, 1995), perception of professional autonomy (Eyer, 1993), age (Eyer, 1993; Shaw, 1987; Oddi, 1986), mode of continuous learning (Reeder, 1994), level of education (Martin, 1993; Shaw, 1987), self-efficacy (Martin, 1993), self-care (Martin, 1993), self-learning resources (Bartlett, 1999), self-concept (Adkins, 1996), personal responsibility (Martin, 1993), healthy behavior (Martin, 1993), self-directed learning readiness (Jude-York, 1993; West & Bentley, 1991), learning activity (Jude-York, 1993), learning climate (Jude-York, 1993), job performance (Jude-York, 1993), assessment of job performance by management (Jude-Youk, 1993), on-the-job learning (Oddi, et al., 1990), participation in educational activities (Oddi, 1986), personality (Oddi, 1986), intellectual development (Shaw, 1987), grade point average (Ngati, 1996), computer anxiety (Hemby, 1998), and left brain hemisphericity (Blackwood, 1989).

The Self-Directed Learning Readiness Scale is a 58-item Likert scale that measures the extent to which an adult is ready

to accept responsibility for his or her own learning activities. Research supports the reliability of the SDLRS. A Cronbach coefficient alpha of .87 was estimated by Guglielmino in her original study in 1977. In another data analysis conducted by Guglielmino in 1988, the split-half reliability was .94. Further reliability support has been provided by Brockett (1985a), Finestone (1984), Long (1987), Long and Agyekum (1983), Owen (1999a), and Reynolds (1986).

Self-directed learning readiness as measured by the SDLRS has been positively correlated with such variables as self-concept (Bligh, 1992; Brockett, 1983, 1985a; Sabbaghian, 1980; Savoie, 1980) and level of education (Redding, 1997; Cheung, 1999; George, 1995; Guglielmino, 1992; Guglielmino, Guglielmino, & Long, 1987; Herbeson, 1991; Jones, 1992; Leeb, 1984; Long & Agyekum, 1983; Sabbaghian, 1980; Stubblefield, 1993; Wood, 1995). Other variables include temperament type (Freed, 1997), ways of coping (Nelson, 2000) problem solving (Durr, Guglielmino, & Guglielmino, 1994), entrepreneurship (Guglielmino & Klatt, 1994), occupation (Redding, 1997), hobby and club activity (Redding, 1997; Long, Redding, & Eiseman, 1993; Long, Redding, & Eiseman, 1994), learning climate (Jude-York, 1993), learning activity (Jude-York, 1993), curiosity (Barnes, 1998), faith maturity (Shimray, 1999), assessment of job performance by management (Jude-York, 1993), adults' childhood experiences

(Stubblefield, 1993), standardized achievement scores (Cloud, 1993), parent-child relations (Cloud, 1993), self-directed continuing learning (Jude-York, 1993; West & Bentley, 1991), personality (Wilson, 1993), mode of learning (Verhey, 1993), sense of personal priority (Wood, 1995, 1996), deterrents to participation (Wood, 1995, 1996), empowerment (George, 1995), student orientation (Delahaye & Smith, 1995), individualism (Braman, 1998), job performance (Yu, 1998; Durr, Guglielmino, & Guglielmino, 1994; Guglielmino & Roberts, 1992; Jude-York, 1993), art related attitudes and behaviors (Jones, 1992), enthusiasm for learning (Bligh, 1992), creativity (Durr, Guglielmino, & Guglielmino, 1994; Roberts, 1986), right brain hemisphericity (Torrance & Mourad, 1978), frequency of learning projects/activities (Hall-Johnson, 1986; Hassan, 1982; Verhey, 1993), locus of control (Skaggs, 1981), learning environment preference (Fullerton, 1998), management style (Bromfield-Day, 2000), job satisfaction (Bromfield-Day, 2000), life satisfaction (Brockett, 1983, 1985a; Curry, 1983; East, 1987), cognitive maturity (Leeb, 1984), motivational orientation (Reynolds, 1986), achievement style (Bitterman, 1989), resource support (Chien, 1998), course grades (Price, Kudrna, & Flegal, 1992; Savoie, 1980), grade point average (Box, 1983; Murray, 1988; Price, et al., 1992), age (George, 1995; Guglielmino, 1992; Guglielmino, et al., 1987; Jones, 1992; Long & Agyekum, 1983),

gender (Redding, 1997; Guglielmino, 1992; Guglielmino, et al., 1987; Stubblefield, 1993; Wood, 1995, 1996), race (Long & Agyekum, 1983), wellness (Owen, 1999b), and time spent on learning projects (Graeve, 1987; Hall-Johnson, 1986).

Research regarding self-directed learning has resulted in findings that have gone unscrutinized (Brookfield, 1984). Thus the implications of findings derived from self-direction research inspired Brookfield (1984; 1985) and Brockett (1985c) to air their opinions within the pages of the Adult Education Quarterly. Brookfield's (1984) assessment of research regarding self-directed learning was advanced by the following criticisms: (a) overuse of educated, middle-class caucasian populations, (b) overuse of quantitative research methodologies, (c) disregard for the social contexts in which self-directed learning occurs, and (d) the lack of discussion raised by research concerning implications for social and political change.

Brockett (1985c) responded to Brookfield's four (1984) criticisms. According to Brockett, "studies provide evidence that hard-to-reach adults can and do engage in self-directed learning" and that "the evidence of self-directed learning among the hard-to reach is quite strong" (1985c, p. 55). Brockett argued that "contemporary self-directed learning research has followed at least three distinct streams of inquiry" (1985c, p. 56). Namely, learning projects, qualitative studies, and

quantitative measures. Of Brookfield's third and fourth criticisms, Brockett admits that "this is where Brookfield's paradigm is at its strongest" (1985c, p. 57). According to Brockett, "[Brookfield's] discussion of social and political implications of self-directed learning raises questions that should be a vital element in future inquiry within this area" (1985c, p. 58).

In a final response to Brockett (1985c), Brookfield reaffirmed his contention that "we have fallen into accepting an unchallenged paradigm of quantitatively oriented studies of the amount of self-directed learning undertaken by (primarily) middle class adults" (1985, p. 60). Furthermore, Brookfield (1985) was firm in his stance that

> [t]he SDLRS may be an appropriate means by which the potential for educationally advantaged adults to undertake independent cognitive explorations of a new field of interest can be judged. To say, however, that it provides a measure of the *adult's* (in a generic, all encompassing sense) readiness for self-directed learning is far too simplistic. (p. 62)

Use of the Self-Directed Learning Readiness Scale has been debated within the pages of the Adult Education Quarterly. One such debate was initiated by Field (1989). Field administered a modified version of the SDLRS to 244 vocational educators in

Sydney, Australia. Data derived from this population prompted Field to conclude that the SDLRS is unreliable, invalid, "flawed, both methodologically and conceptually," and not justified for use (1989, p. 138). Furthermore, Field argued that Guglielmino's original research is methodologically and conceptually flawed. Issues of concern to Field included: (a) the use of the Delphi technique as the basis for item generation, (b) the definition of the terms readiness and self-directed learner, (c) the use of negatively phrased items, and (d) the incorporation of additional items after validation of the scale.

Guglielmino (1989) reacted to Field's first criticism by explaining that "the Delphi was never used as a means of selecting items; rather, it was used as a means of arriving at a consensus" (pp. 235-236). Of Field's second criticism, Guglielmino insisted that "readiness for self-directed learning exists along a continuum" (pp. 236-237) and that while "self-directed learner is not defined by the researcher, it *is* defined by the Delphi panel" (p. 236). Of Field's third criticism, Guglielmino argued that "[w]hen all of the items on a self-report instrument are positively stated, subjects can easily develop a response set" (p. 237). And to combat Field's final criticism, Guglielmino pointed out that the "17 additional items

were added after an initial field test, not 'after validation of the scale'" (p. 238).

Long (1989) and McCune (1989) lent their support to Guglielmino. Long accused Field (1989) of: (a) omitting research observations supporting the SDLRS's reliability and validity and (b) "particularly misleading" readers by inappropriately lifting quotes out of context (1989, p. 241). McCune questioned Field's understanding of statistical concepts, and noted that Field's criticisms were based on statistical analyses derived from a modified version of the SDLRS. According to McCune (1989),

> [i]t is quite possible that altering the response format of the scale introduced a response bias into the test. Prior to using the modified SDLRS for a research study, [Field] should have verified that the scores obtained do not differ significantly from scores obtained using the standard SDLRS. Because Field did not pretest the modified SDLRS, it is problematic that his analyses, findings, and conclusions should apply to the standard SDLRS. (p. 244)

In a final response to Guglielmino (1989), Long (1989), and McCune (1989), Field (1990) reasserted his original positions, essentially claiming that the SDLRS has serious statistical, methodological, and conceptual flaws, and that its use should be discontinued.

Others have raised concerns about the SDLRS. For instance, Bonham (1991) has suggested that the SDLRS is chiefly a measure of school- or book-oriented learning readiness, thus not measuring learning readiness for resources other than books or formal schooling. Brookfield (1984) contended that the SDLRS is biased toward middle-class caucasians. It has also been argued that the research, controversies, and debate generated by the SDLRS outweigh any limitations that the instrument may have (Brockett, 1985b; Brockett and Hiemstra, 1991).

Only one previous research study has included measures of both self-directed learning and wellness. Leeb (1984) sought to identify the relationship between self-directed learning readiness and cognitive maturity among a random sample of adults who demonstrated high-level wellness behaviors as measured by the Personal Wellness Scale (Dull & Haun, 1981). Leeb assumed that learning was the process by which adults attained high-level wellness and addressed the question of whether self-directedness and cognitive maturity characterize individuals who practice wellness conducive lifestyles.

Analysis of the data led Leeb to describe her population of healthy adults as possessing high levels of both self-directed learning readiness and cognitive maturity. High total self-directedness and the influence of the SDLRS factor "acceptance of responsibility for one's own learning" supported the notion

that individual responsibility and self-initiative are keys to attaining high-level wellness. Moreover, Leeb's population of adults who had successfully incorporated wellness practices into their lifestyle was at a stage of cognitive and ethical development that denoted a capacity for self-responsibility and self-efficacy.

The research concerning self-directed learning has contributed greatly to the adult education literature base. Yet it has been suggested that the topic has been relatively exhausted and that future inquires be limited so that other research topics may gain momentum and attention (Brookfield, 1984, 1993; Caffarella & O'Donnell, 1988, 1991; Merriam & Cafferella, 1991). Contrarily, many viable research possibilities regarding self-direction in adult learning have not been exhausted, e.g., the relationship between wellness and self-direction. Therefore, "self-direction in learning should continue to evolve as one of the major research directions in the field of adult education" (Brockett & Hiemstra, 1991, p. 221).

Summary

This paper reviewed the literature related to self-direction. Self-directed learning was defined according to Knowles, Guglielmino, Brookfield, Brockett and Hiemstra, and

Candy. Theoretical approaches included humanism, personal responsibility orientation (PRO), behaviorism, neobehaviorism, critical perspectives, and constructivism. Approaches to research on self-directed learning included learning projects, qualitative studies, and quantitative measures.

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